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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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09/617,272 07/17/00 KATO

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OLIFF & BERRIDGE PLC  
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EXAMINER

MULLINS, B

ART UNIT

PAPER NUMBER

2834

DATE MAILED:

11/07/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/617,272

Applicant(s)

Kato

Examiner

Burton S. Mullins

Art Unit

2834



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1) ☒ Responsive to communication(s) filed on Sep 20, 2001

2a) ☒ This action is **FINAL**.

2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

4) ☒ Claim(s) 4-8 is/are pending in the application.

4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 4-8 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement

## Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some\* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

BURTON S. MULLINS  
PRIMARY EXAMINER

## Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_

20) ☐ Other:

## **DETAILED ACTION**

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the terms “inner shoulder,” “outer diameter [of the magnet disk],” “outer shoulder of stepped shape,” “outer diameter of the outer shoulder,” “outer diameter of the downwardly depending flange” and “a clearance between the downwardly depending flange...and the magnetic disk”.

### ***Claim Objections***

2. Claim 4 is objected to because of the following informalities: On line 12, delete “as well as” and replace with --and---; change “is” to --are--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. Claims 4-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 4, functional recitation “so as to enlarge the outer diameter of the bearing means” is vague and indefinite. It is not clear how the claimed dimensions serve to “enlarge” the bearing diameter; nor is it clear what the bearing diameter is “enlarged” relative to.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over McAllister et al. (US 5,397,971) in view of Moritan et al. (US 5,715,116). McAllister teaches a spindle motor for driving a magnetic disk including: a rotor or hub 19 (Fig.4) having a downwardly depending flange at an outer periphery thereof (not numbered, see Fig.4); the hub 19 journaled on a base (stator) 18 by means of bearings 18d; a ring magnet 19c on an inner peripheral surface of the downwardly depending flange (see Fig.4); the hub 19 having an inner shoulder on a surface thereof defined by cylindrical upper end 19b (c.4, lines 62-63); stator core 18e on the base opposed to the magnet 19c and including coils 18g (Fig.5); a standard magnetic disk 2a with a central aperture (not numbered) to be fitted around the inner shoulder 19b of the hub 19 (Fig.4); wherein the downwardly depending flange of the hub has an outer diameter larger than an inner diameter of the central aperture of the standardized magnetic disk (see Fig.4); an inner diameter of the magnet 19c and an outer diameter of the stator 18e are larger than the outer diameter of the inner shoulder 19b (see Fig.4); the hub 19 including an outer shoulder (not numbered; see Fig.4) of stepped shape; the outer diameter of the outer shoulder larger than the outer diameter of the inner shoulder 19b and smaller than the outer diameter of the downwardly depending flange to form a clearance (not numbered; see Fig.4) between the downwardly depending flange, which surrounds the magnet 19c, and the magnetic disk 2a.

McAllister differs only in that the bearings 18d are not hydrodynamic bearings.

Moritan teaches a hydrodynamic bearing for use in a spindle disk drive motor comprising a rotor shaft 12 with herring-bone grooves thereon in combination with a sleeve 21 (Figs.1a-1b) fit into the inner wall of hollow cylinder 23a forming part of the stator (c.7, lines 47-53). This type of bearing is well known for its small volume, quiet operation and low vibration (c.1, lines 40-52).

It would have been obvious to modify the bearings of McAllister and provide a fluid bearing per Moritan because such a bearing would have been desirable for its small volume, quiet operation and low vibration.

Regarding claim 6, the shaft 19a is fitted on the hub of McAllister (Fig.4)

6. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over McAllister et al. (US 5,397,971) in view of Suzuki et al. (US 5,793,135). McAllister, as described above, substantially teaches applicant's invention but differs in that the bearings are not hydrodynamic bearings.

Suzuki et al. (US 5,793,135) teaches a dynamic fluid sleeve bearing for a disk drive motor comprising a "boss" (support shaft) 25 integral with the motor base (Fig.) The rotor shaft 28 is fitted onto the boss 25. Two journal regions 29 and 30 formed therebetween comprise a hydrodynamic bearing that includes spiral grooves formed on the support shaft to reduce friction (c.3, lines 38-43). The dynamic sleeve bearing maintains the same advantages of ball bearings while reducing production costs (c.2, lines 1-7), as well as improving steadiness of bearing action (c.4, lines 31-40).

It would have been obvious to modify the bearings of McAllister and provide a fluid sleeve bearing per Suzuki because this would have been desirable to reduce production costs and improving bearing steadiness.

***Response to Arguments***

7. Applicant's arguments with respect to claims 4-8 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is (703) 305-7063.

bsm

November 5, 2001

  
BURTON S. MULLINS  
PRIMARY EXAMINER